

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER No. 98-117

NPDES PERMIT NO. CA0038130, CA0037788, CA0038318, CA0037532, CA0028070

AMENDING WASTE DISCHARGE REQUIREMENTS FOR:

CITIES OF SOUTH SAN FRANCISCO/SAN BRUNO, MILLBRAE, BURLINGAME, AND SAN  
FRANCISCO INTERNATIONAL AIRPORT  
NORTH BAYSIDE SYSTEM UNIT  
SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board, finds that:

1. The Board adopted waste discharge requirements for the Cities of South San Francisco and San Bruno (Order No. 97-086), City of Burlingame (Order No. 95-208), City of Millbrae (Order No. 94-048) and San Francisco International Airport (Order No. 95-054 and 92-110) (hereinafter called the dischargers), to discharge wastewater to the waters of the State and the United States through a deep water outfall under the National Pollutant Discharge Elimination System (NPDES).
2. The dischargers are members of the North Bayside System Unit (NBSU), which is the Joint Powers Authority responsible for operation of certain shared transport and disposal facilities. The combined effluent is dechlorinated before discharge into San Francisco Bay.
3. The South San Francisco and San Bruno Water Quality Control Plant has an average dry weather flow capacity to provide secondary level treatment for 9.0 million gallons per day (mgd) of domestic commercial and industrial wastewater. The Burlingame Wastewater Treatment Plant has an average dry weather flow capacity to provide secondary level treatment for 5.5 mgd of domestic and commercial wastewater. The Millbrae Wastewater Treatment Plant has an average dry weather flow capacity to provide secondary level treatment of 3.0 mgd of domestic and commercial wastewater. The San Francisco International Airport Water Quality Control Plant has an average dry weather flow capacity to provide secondary level treatment for 2.2 mgd of domestic wastewater from airplanes and the various facilities at the Airport. The San Francisco International Airport Industrial Wastewater Treatment Plant has an average dry weather flow capacity to provide treatment for 1.2 mgd of industrial wastewater from various facilities at the Airport.
4. The treated wastewater discharges from the NBSU force main and outfall into lower San Francisco Bay, a water of the State and United States, northeast of Point San Bruno through a submerged diffuser about 5300 feet offshore at depth of 20 feet below mean lower low water (Latitude 37 deg., 39 min., 55 sec.; Longitude 122 deg., 21 min., 41 sec.).
5. Table 4-2 and its footnotes in the Basin Plan allow fecal coliform limitations to be substituted for total coliform limitations provided that the discharger demonstrates that there is no unacceptable adverse impact on the beneficial uses of the receiving waters. Several dischargers, beginning with the City and County of San Francisco Southeast Water Pollution Control Plant in 1992 have conducted chlorination reduction and receiving water impact monitoring studies, to support substitution of fecal for total coliform effluent limits. Other dischargers who have also successfully conducted such studies include Central Contra Costa Sanitary District, East Bay Dischargers Authority, East Bay Municipal Utility District, Central Marin Sanitation Agency, City of San Mateo, and South Bayside System Authority (SBSA).

Each of these studies measured the effect of reduced chlorine dosages on fecal coliform numbers in both treatment plant effluent and receiving waters. The studies universally demonstrated that there was no discernible relationship between treatment plant effluent fecal coliform levels and off-shore, receiving water fecal coliform levels. Receiving water fecal coliform levels remained low, typically at or below the detection limit, even when treatment plant effluent fecal coliform levels were as much as 100 times greater than the associated fecal coliform water quality objective. As expected, concentrations were elevated during wet weather periods at the off-shore stations including the reference station, indicating impacts were related to stormwater runoff, not the treatment plant effluent.

6. Prior studies have also demonstrated that in addition to the there being no relationship between effluent and offshore receiving water fecal coliform concentrations, there was no relationship between treatment plant and shoreline effluent fecal coliform concentrations. Shoreline fecal coliform monitoring conducted by the City of San Mateo during the City's and SBSA's 1997 fecal coliform studies showed no relationship between either dischargers' effluent fecal coliform concentrations and the shoreline concentrations. The San Mateo outfall is approximately 3700 feet offshore and the SBSA outfall is approximately two miles from the historic south Foster City shellfish harvesting beds. The NBSU outfall is approximately 6.5 miles from the nearest historic shellfish harvesting area. The San Mateo and SBSA studies found that along the south Foster City shoreline, even during dry weather, the five sample median 14 MPN/100 mL fecal coliform shellfish harvesting objective was only met on two occasions and as noted above, levels were unrelated to effluent concentrations. The 1990 Foster City Lagoon Management Plan reported the large presence of birds in this area and indicated that they may be the greatest "point source" of coliform in the vicinity.
7. In the Board's prior actions to substitute fecal for total coliform limits for the dischargers cited in Finding 5, the Board has chosen to adopt the relevant fecal coliform water quality objectives directly as effluent limits, without consideration of dilution. For deep water dischargers with water contact recreation (REC-1) beneficial uses such as board surfing (Central Marin Sanitation Agency and San Mateo), this has meant applying the Basin Plan's five-day log mean fecal coliform water quality objective of 200 MPN/100mL and 90th percentile objective of 400 MPN/100mL as effluent limits. For the other dischargers, with only limited water contact recreation beneficial uses in the vicinity of their discharges, they have received five-day log mean fecal coliform effluent limits of 500 MPN/100mL and 90th percentile limits of 1100 MPN/100mL. These limits are based on the associated limited water contact objectives as recommended in an October 24, 1990 memorandum from the California Department of Health Services (DHS) to the SWRCB Executive Director.
8. Past Board practice for total coliform limits has been to use daily maximum limits instead of 90th percentile limits and to set them at a factor of at least 10 times higher than the corresponding five or seven day median limits. The 1997 San Mateo and SBSA studies both presented a statistical evaluation of the data, a discussion of the uncertainty inherent in the MPN methodology, and a rationale and request for alternative daily maximum fecal coliform limits. Board staff have reviewed the requests for alternative daily maximum limits and believe that this is a broader issue requiring additional information, analysis, and public involvement that is best addressed through the Basin Plan amendment process.
9. Board staff have reviewed the results of the multiple prior fecal coliform studies and believe that they provide adequate documentation that deep water dischargers, receiving a minimum of 10:1 dilution and generally considerably more, have a negligible potential to create an exceedance of applicable fecal coliform water quality objectives when operating with the objectives as effluent limits. By definition, the level of fecal coliform discharged from the diffuser after initial dilution will be at least ten times lower than that in the effluent. Additional dilution and dispersion will occur depending on depth, current, tidal conditions, wind, and other factors. Based on this analysis, Board staff have concluded that it is not necessary for other deep water dischargers, such as the NBSU member agencies, to continue to repeat the chlorination reduction and receiving water studies performed by previous treatment plants. Adequate evidence exists for the Board to find that deep water dischargers will comply

with the Basin Plan requirements to demonstrate the absence of adverse impacts on beneficial uses when dischargers are permitted to operate with fecal coliform effluent limits equal to the appropriate fecal coliform water quality objectives.

10. Accordingly, this Order amends the permits of the NBSU member agencies to include fecal coliform instead of total coliform effluent limits. Since there is water contact recreation (board surfing) conducted in the vicinity of the NBSU outfall off of Point San Bruno, the effluent limits will be set equal to the Basin Plan water contact recreation objectives. The Board will consider reopening affected permits to include alternative log mean and/or daily maximum effluent limits following a review of the water quality and technical basis for the Basin Plan's receiving water bacteriological objectives and methodology for translating them into effluent limits.
11. Modification of the coliform effluent limits from a total coliform to a fecal coliform basis allows for reduced usage of chlorine, which in turn reduces the discharge of chlorinated organic by-products (chlorinated organics such as trihalomethanes), which are potentially harmful to the Bay and its biota. Associated risks to the public from the production, transportation, storage, and handling of chlorination and dechlorination chemicals will also be reduced.
12. The above mentioned studies provide new information not available at the time the Dischargers' permits were issued which justifies application of a different coliform limit. Therefore, this revised effluent limit does not violate the anti-backsliding provision of sections 402(o)(1)-(3) and 303(d)(4) of the Clean Water Act. The revised effluent limit will not result in any decrease in water quality and therefore it is consistent with the State Board Resolution 68-16 (Anti degradation Policy) and with the Federal Anti degradation Rule (40 CFR 131.12).
13. The amendment of NPDES permits is exempt from the provisions of Chapter 3 (commencing with Section 21100 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 13389 of the Water Code.
14. The Dischargers and interested agencies and persons have been notified of the Board's intent to amend the requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.
15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

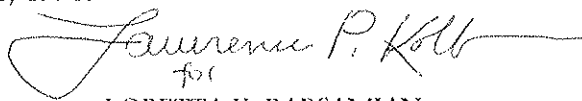
IT IS HEREBY ORDERED, that:

Section B. (and appropriate subparagraph) under "EFFLUENT LIMITATIONS" of Order Nos. 97-086, 95-208, 94-048, 95-054, and 92-110 shall be amended to read as follows:

Fecal Coliform Bacteria. The treated wastewater, at some place in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

The five day log mean fecal coliform density shall not exceed 200 MPN/100 mL, and the 90th percentile value of the last ten samples shall not exceed 400 MPN/100 mL.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 16, 1998.



LORETTA K. BARSAMIAN  
Executive Officer